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Patrick Guillaumont, Sylviane Guillaumont Jeanneney

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**Absorptive Capacity:  
More Than the Volume of Aid, its Modalities Matter**

by

**Patrick Guillaumont and Sylviane Guillaumont Jeanneney**

*CERDI, CNRS and Université d'Auvergne*

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This paper draws from communications presented in various meetings where the authors benefited from useful comments, in particular the WIDER Conference on Aid: Principles, Policies and Performance, Helsinki, June 2006, the World Bank ABCDE Europe in Amsterdam, May 2005, the first African Economic Conference organised by the African Development Bank in Tunis November 2006. Special comments from Peter Heller are particularly acknowledged. Usual disclaimers apply.

## Summary

*We examine whether absorptive capacity represents a valid reason to reject the proposal of a large aid increase in order to help poor countries to move out of the underdevelopment trap. We consider absorptive capacity, the set of limits to an effective use of aid inflows, under four main aspects: 1) disbursement constraints, which lead to under utilisation of credits; 2) macroeconomic troubles, including loss of competitiveness and macroeconomic volatility; 3) decrease of aid returns, actually slower in more vulnerable countries, 4) institutions weakening induced by aid dependency. We argue that these limits to absorptive capacity may be removed by an improvement of aid modalities, such as better balancing between productive and social activities financed by aid, using aid as insurance against exogenous shocks, giving priority in aid allocation to “least developed countries”, which are the most vulnerable, and finally substituting a performance-based conditionality to the traditional-policy based one.*

**Key words :** Aid effectiveness, absorptive capacity, conditionality, volatility

## Introduction

Generated by the perspective of increasing aid inflows, the so-called “scaling up” as a means to achieve the Millenium Development Goals, a strong interest on the issue of absorptive capacity has recently emerged. The absorptive capacity concept applied to foreign aid is however a rather old concept, used for more than half a century. A famous proposal Millikan and Rostow (1957) recommended allocating aid according to the absorptive capacity (once taken into account domestic saving). They were noticeably followed by Rosenstein-Rodan (1961) who presented the most comprehensive use of the absorptive capacity concept to measure the capital needs of the developing countries. It could to-day be seen paradoxical to find such a support to the absorptive capacity concept from the first and main advocate of the “big push” strategy (Rosenstein-Rodan, 1943). Nurkse (1953), also in favour of balanced growth and big push, himself referred to the limitations of absorptive capacity of aid for investment, as did, even shortly, most of the main works on development economics of the fifties. To be remarked, these limitations were first noted in the *Fourth Annual Report* of the IBRD in 1949 (an historical survey may be found in Guillaumont 1971).

The reason why absorptive capacity and big push did not appear half a century ago as contradictory as they now seem to be is double. First, both concepts rely on the idea that low income countries face structural obstacles to growth, which are reflected in the absorptive capacity and to be overcome require massive investment in interdependent sectors. Second, aid is today likely to significantly increase and then absorptive capacity becomes a kind of warning about the risk of waste, whereas it was fifty years ago rather a criterion used to mobilize more aid. However the use of the absorptive capacity concept is still ambiguous, as it was in the past: it both reflects a genuine effectiveness concern in case of increasing aid flows, but also a possible pretext to limit or postpone an increase of aid volume. Actually besides an attack against the idea of a big push which could move a country out of an underdevelopment trap, several criticisms of a large aid increase have been presented under the notion of absorptive capacity, which consequently appears as an encompassing concept. They intend to evidence the reasons why an increased aid is likely to be useless, wasted or even harmful, and consequently not leading to a big push and a subsequent escape from poverty. In this context the notion of absorptive capacity of external aid has been used with several different meanings, which are sometimes contradictory and we try to clarify in this paper.

Going from the shorter to the longer term issues, we can identify four main meanings. A first one refers to the disbursement constraints or the disbursement slowness, evidenced by a low rate of utilisation of credits or a long lag between commitments and disbursements; let us call it a “pipeline approach”. The second meaning refers to possible macroeconomic troubles associated with large aid inflows (disbursements): these troubles include in particular a loss of competitiveness, through real currency appreciation (“Dutch disease approach”) and the recently debated effects of aid volatility. The third and more classical meaning of absorptive capacity is a drop (possibly a cancellation) of the marginal return of aid beyond a certain amount, analysed at the macro level, in terms of growth (or achievement of any Millenium Development Goal), or at the micro level, in terms of projects or specific expenditures impact (“decreasing returns approach”). Finally a fourth meaning should be added, which is a weakening of institutions induced by aid or a lack of social assimilation (“socio political approach”). After decades where the concept was hardly used, it now appears burgeoning through these various meanings, which all reflect the idea of a threshold beyond which aid could not be used effectively

In this paper we examine whether absorptive capacity, according to each of these four meanings, represents a valid reason to reject the proposal of a large aid increase in order to help poor countries to move out of the underdevelopment trap, assuming the existence of such a trap (point discussed in Guillaumont and Guillaumont Jeanneney 2006). To do so we successively consider the following points and corresponding questions:

- disbursement constraints and short term bottlenecks: why is there an underutilisation of credits? To overcome the constraint, a reform of aid procedures is needed;
- macro economic troubles, including loss of competitiveness and macroeconomic volatility: to what extent is there a risk of Dutch disease? Needed here is both to focus on productivity and on the stabilizing impact of aid;
- decreasing returns: why are they more or less quickly decreasing? We argue that the decrease is slowed down in vulnerable countries, what makes these countries a priority in aid allocation;
- institution weakening: how can it be avoided? To a large extent by a performance based conditionality.

With regard to these four meanings of absorptive capacity, we argue that there may be actual limits to absorptive capacity of aid, but that they may be removed by an improvement of aid modalities. As for absorptive capacity, more than the volume of aid, its modalities matter.

### **1- Disbursement constraints: a need to reform procedures.**

Disbursement raises the first difficulty to absorb more aid. The lag between commitments and disbursements has been considered for many years (Guillaumont 1967). Curiously it has not led to many studies, although quantitative analysis can be easily applied. For instance, Odedokun (2003) analyses the donor-specific factors that cause donors to delay disbursements. Anyway a complaint of receivers (and sometime of donors) about the large gap between cumulative commitments and disbursements, so called “pipeline”, is more and more frequent. Actually the rate of underutilisation of credits is in some cases dramatically high, leading to scepticism on the possibility to use significantly higher amount of aid.

The reasons behind this may lie in the features of the receiving countries, such as low administrative capacities or weak transportation infrastructure, as well as in the non-fulfilment of the conditions attached to disbursement. However, with that case in view, Svensson (2006) has been led to refer to “a strong bias towards “always” disbursing committed funds to the ex ante designated recipient, or project, irrespective of the recipient government’s performance, or the conditions of other potential aid recipient countries (projects)”: here the risk is that of an excess of spending under the budget pressure, rather than the risk of a disbursement lag...

But the disbursement lags may also result from the inadequacy of the aid modalities to the recipient features. The multiplicity of aid sources in a country (the “aid fragmentation”) with different procedures, forms and disbursement conditions is all the more a problem that the country is small and has low administrative capacities. Donors are then inclined to target supports on the reinforcement of administrative capacities of receivers, rather than to modify their own behaviour. It is a valuable but a long term process, as well as the improvement of transport facilities and infrastructure which also make the disbursement of project aid easier. Identifying and attacking such bottlenecks will stay for a long time on the agenda.

A lesson is to look for more appropriate procedures...The Declaration of the Paris Forum on Aid Effectiveness in 2005, besides considerations on “alignment” and “predictability” on which we come back later, underlines the need for a “harmonisation” of procedures and defines related indicators. However, to quote Peter Heller (2005): “Current approaches with respect to the goals for harmonization...are still far short of the professed objectives and aid recipients have reasons to be uncertain about how long it will take for these gaps to be closed. Moreover, it must be daunting for LDCs to catalogue both the number of donors with which they must work, as well as the multiplicity of their objectives, modalities of operation, underlying criteria for aid levels, and conditionalities and terms of aid”.

One can wonder whether in view of the difficulties met in the harmonisation process, still very slow, a more radical reform is not needed, consisting, as we shall see in our last point, in adopting an outcome based conditionality. It would meet both the concerns about disbursement lags and about disbursement incentives, avoiding bias from either source.

## **2- Macroeconomic troubles from higher aid inflows: are they real troubles?**

We now suppose that not only commitments, but also, disbursements are significantly increased, possibly with delay. Disbursement lags postpone the risk of macro economic troubles we now examine. Two kinds of troubles have been extensively considered in the recent literature. One is the risk resulting from an appreciation of the real exchange rate. The other one, likely to reinforce the first one, is the risk associated to the volatility of aid flows. While not negligible, these two risks are often overestimated. At least they require adequate treatment from an assessment with regard to some basic economic principles.

*Real exchange rate concern: will aid increase induce a loss of competitiveness?*

There are a lot of works insisting on the risk of a real exchange rate appreciation following a scaling up of aid flows, either from IMF/World Bank authors (see Arelano et al. 2005, Heller 2005, Gupta et al. 2006, Rajan and Subramanian 2005, World Bank and IMF 2005, 2006), or from the academic aid literature (Adam and Bevan 2006, Adam 2006, Bevan 2005, Gunning 2004). It is argued that increased aid inflows would generate Dutch disease effect, through an appreciation of the real exchange rate, with a subsequent loss of competitiveness in the tradable sectors, harmful for exports and also for a competitive import

substitution. Aid can have this effect whatever the exchange rate regime: through the increase of the domestic price of non tradable in a fixed exchange rate regime, through the appreciation of the nominal exchange rate in a regime of floating rate.

Whereas the mechanisms under review are clear, the empirical evidence on the occurrence of such a disease seems mitigated (see for instance some studies in Berg et al. 2005). Gupta et al. (2006) present a sample of econometric studies which illustrates how contradictory the results are: some authors find a positive link between aid inflows and real exchange rate (eg Kasekende and Atingi-Ego 1999 for Uganda), some others a negative link. Even the influential paper by Rajan and Subramanian (2005), where it is argued that aid has a negative effect on the share of labour intensive and tradable industries, only suggests it could be due to a real appreciation, without really testing this hypothesis, nor considering possible effects on other tradable, such as agriculture and tradable services, which may be particularly important in small and high aid recipients developing countries.

Why so little evidence? In the short run the increase of the price of non tradable occurs only if there is no underutilised productive capacity in the non tradable sector. If there is such capacity, due for instance to disguised urban unemployment, the supply elasticity may be relatively high. In the long run a real appreciation will occur following a sustained higher aid level only if it is not compensated by an increase of productivity in the non tradable sector, as argued by Heller (2005) to recommend aid uses favouring such an increase, what is not so easy.

Moreover in the longer run an increase in productivity in the sector of tradable is likely to compensate the effect of a possible rise of the non tradable price on competitiveness. If according to the Balassa-Samuelson theorem, a growth of income per capita higher than in the rest of the world involves an appreciation of the real exchange rate, the achievement of a big push should lead to this appreciation. Then there cannot be a big push without real appreciation: if aid succeeds to support a big push, it should make the real value of the currency to appreciate. Appreciation no longer becomes a problem; it reflects the success of the strategy.

These arguments have strong implications for economic policy. In the short run, macro economic management of increased aid inflows may help to prevent a too fast rise of non



tradable relative price, although reserves sterilisation can only be a transitory and partial solution (Heller 2005). More important is to consider uses of aid as well as of public domestic resources. Needed is to keep a balance between aid allocated to productive sectors and aid to social sectors: aid to increase children health and education will indeed increase productivity, but only in the long term. Using aid to improve infrastructure is in that perspective an important factor to increase absorptive capacity (Agénor et al. 2006) Briefly stated, aid aiming at promoting balanced growth should itself be balanced.

*Threaten of aid volatility: is aid destabilising or stabilising?*

Aid volatility has become a very fashioned topic and one of the favourite arguments to enlighten the danger of a rapid aid increase. Aid, if volatile, might be a source of macro economic instability and all the more that aid level is higher<sup>1</sup>. This can be a way by which absorptive capacity is revealed. Aid indeed is volatile, but it does not mean it is destabilising, nor likely to be so, if its level is increased. Let us summarise the conclusions of an on going research partly presented in the two other papers (Guillaumont 2006, Chauvet and Guillaumont 2006).

A prior issue is to choose the other flow to which it is relevant to compare aid volatility. A usual comparison is with tax revenue, to examine the effect of aid instability on public budget stability or with national income. If the concern is with macroeconomic vulnerability, it is preferable to compare the aid fluctuations (or cycle) to those of exports of goods and services, the aggregate the most likely to be affected by exogenous shocks. Tax revenues, as well as national income, are influenced by the overall impact of exports, but also by aid. Moreover, all aid flows are not channelled through the public budget, what makes relevant to consider the volatility of the different kinds of aid (Fielding and Mavrotas 2005).

Comparing total aid (net disbursements) to (goods and services) export fluctuations (measured by one or another way), our studies quoted above lead to the two following conclusions.

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<sup>1</sup> Bulir and Hamann 2003, 2005; Lensink and Morrissey 2000; Pallage and Robe 2001; Rand and Tarp 2002, Eifert. and Gelb 2005).

(1)- Criticism of aid volatility may be misplaced if aid has a compensatory profile. This could be consistent with the finding that aid is more effective to promote growth in countries vulnerable to exogenous shocks, this more significantly than in countries with “good policies”: in other words aid dampens the negative impact of exogenous shocks (Guillaumont and Chauvet 2001, Chauvet and Guillaumont 2004, 2006). As previously argued for real exchange rate appreciation, aid volatility could be a solution rather than a problem. In that perspective the volatility of aid is not so much to be criticized as its pro-cyclicality.

For a sample of 70 to 90 developing countries during three decades from 1970, the pro-cyclical character of aid is measured by the correlation between the “cycle” of aid (that is, its deviation from its trend using a Hodrick-Prescott filter) and the “cycle” of exports. During the seventies and the eighties aid was indeed more pro-cyclical than contra-cyclical with respect to export (11 or 12 significant positive correlations among 70 or 79 countries and 6 significant negative countries); in the nineties, the number of negative significant cases (decreasing to five) converges towards the positive cases. The striking point is that in the majority of cases the correlation coefficients on which the comparison relies are not significant<sup>2</sup>. Therefore pro-cyclicality appears not to be the rule, not even in the majority of cases as it is sometimes asserted. A similar balance is found for an African sub sample.

(2)-Measuring counter-cyclicality or pro-cyclicality is itself less relevant than determining whether aid inflow is stabilizing or destabilizing with regard to the total aid plus export flow. Pro-cyclical aid can still be stabilizing if its volatility, expressed in relative terms, is lower than the volatility of exports. There may also be opposite and paradoxical cases where aid is countercyclical and destabilizing, when its volatility is significantly higher than that of exports, in a proportion depending on the relative levels of aid and exports<sup>3</sup>. What is the real picture? To assess the stabilizing character of aid, let us consider an index corresponding to the difference between the volatility of exports and that of the aid plus export flow: if the difference is positive, aid is stabilizing; if it is negative, aid is destabilizing.

The aid and “export plus aid” volatilities are calculated for the three decades as the average absolute value of residuals obtained by regressing the variable on its lagged value and

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<sup>2</sup> At a 10 percent threshold

<sup>3</sup> On one year the arithmetic condition is that the absolute value of the ratio of the relative cycles exceeds one plus twice the ratio of exports to aid.

a trend over the period 1970-1999. Among 239 observations 71% corresponded to cases where aid appears stabilizing and 40% corresponded to “paradoxical” cases where aid is simultaneously pro-cyclical<sup>4</sup>. In the majority of cases where aid was pro-cyclical, it was stabilizing. When aid was countercyclical, it was, as expected, generally but not always stabilizing. The following graph (Graph 1) evidences that the stabilising impact of aid (measured by the difference between the two volatilities) is all the more important that the aid GDP ratio is higher, and is not significantly influenced by the level of aid volatility.

In the future, if aid is strongly growing, its potential stabilising or destabilising impact with regard to exports will be higher, but the risk of a destabilising impact will remain low since, in the case of pro-cyclicality, it is conditioned by a level of volatility higher than that of exports.

As far as export are not the only exogenous source of instability, it is also relevant to examine whether aid contributes to lower or enhance *growth volatility*, once taken into account the influence of traditional structural factors of this overall volatility. We have estimated an equation where income volatility is a function of aid to GDP and aid volatility. We control for initial income, lagged income volatility, export to GDP and volatility of exports<sup>5</sup>. It appears that aid volatility contributes to income volatility as well as do export level and export volatility, whereas the level of aid dampens it (Chauvet and Guillaumont 2006). Moreover in a second step we evidence that the significant negative impact of exports volatility can be mitigated by aid since aid interacted with export volatility is significantly positive. In a last step we add to the regression the stabilizing character of aid which appears significantly positive while the significance of the coefficient of aid interacted with exports volatility tends to lessen. These results suggest that there may be a stabilising effect of the level of aid, distinct from the stabilising impact relative to the time profile of aid (contra-cyclicality and volatility) .

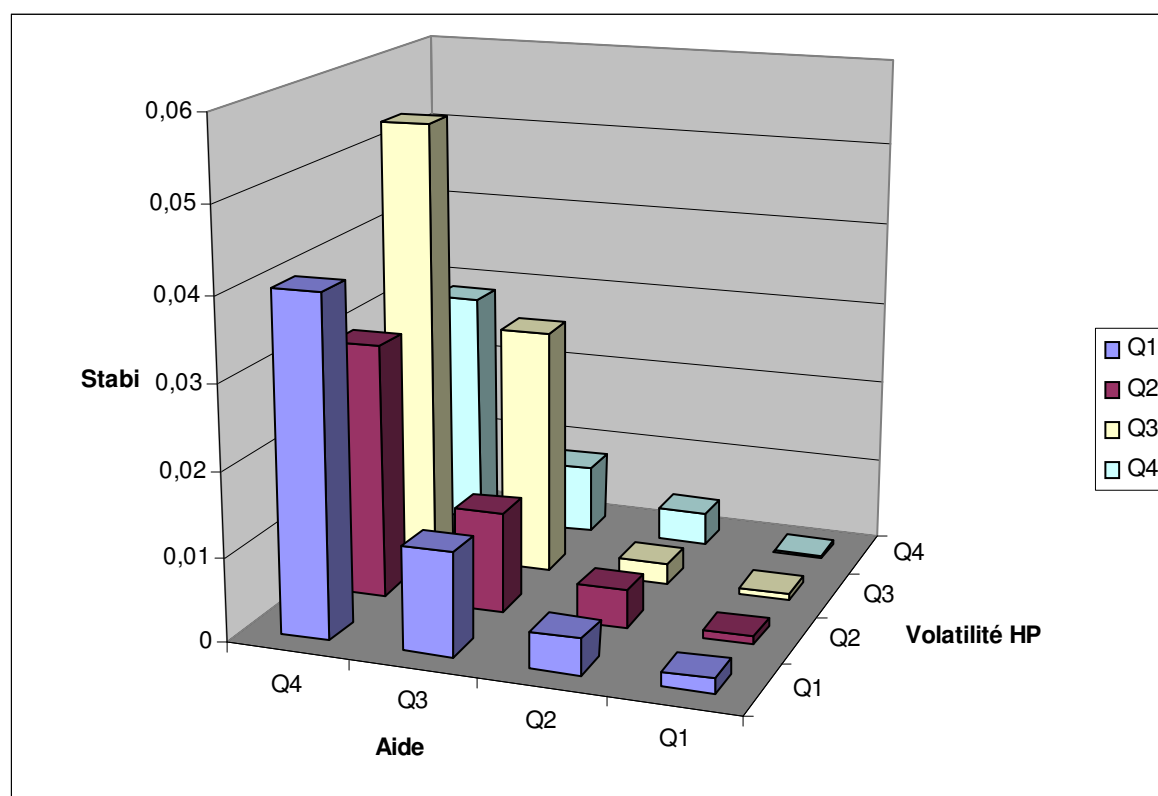
Even if on average aid has been in the past rather stabilising, some policy lessons can be drawn from the past experience to avoid a destabilising effect of higher aid levels in the future. On the donor side, the principle of conditionality is by itself a potential factor of

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<sup>4</sup> Here aid is considered as pro-cyclical if the correlation between aid cycles and export cycles is positive even if it is statistically not significant.

<sup>5</sup> Two kinds of instrumentation are used: specific instruments for each variables and Difference GMM method.

instability, and all the more that donor policies are harmonised (Heller 2005). However the move towards a more gradual conditionality, involved by an output based conditionality, may lower the risk of aid instability, since the assessment of results or outcome is less dichotomic than that of policy measures implementation. Moreover a better transparency in the criteria of aid allocation may render aid more predictable and then facilitate the domestic management of aid flows.



NB. The level of stabilising effect of aid as defined in the text is represented for 16 groups of developing countries classified by the quartiles of the aid to GDP ratio and the quartiles of aid volatility (Hodrik-Prescott measure)

**Graph 1. Stabilising impact of aid with regard to exports  
according to aid to GDP ratio and aid volatility**

Finally it is an argument to use more extensively aid as an insurance to smooth public and private incomes facing export instability or other shocks. As we have explained elsewhere solutions do exist which can be built on a contractual basis involving international community, recipient country governments and producer groups, and respect market trends (Guillaumont and Guillaumont Jeanneney 2003, Guillaumont et al. 2005). They notably include grant disbursement and/or debt service adjustment in response to price shocks, and support to domestic insurance schemes targeted to agricultural producers.

On the recipient side a higher aid dependency needs a cautious management of the domestic fiscal space. The government has to be able to keep some flexibility in public expenditures and to save some potential of domestic borrowing. It may also find appropriate to accumulate a certain level of foreign reserves likely to be used to smooth the impact of aid inflows.

### **3 - Decreasing returns: more slowly in vulnerable countries**

Absorptive capacity, in the most usual meaning of the concept, is associated with decreasing returns (Guillaumont 1985, Bourguignon and Sundberg 2007). There may be decreasing returns of aid, as for any other factor. However decreasing returns do not exclude increasing returns below some aid level, consistently with the big push hypothesis. An additional analytical difficulty comes from that the turning points are likely to differ among recipient countries, depending on their own characteristics. Here we focus on their structural vulnerability, since, as noted above, this feature has appeared to be a significant factor of aid effectiveness. To argue that vulnerability influences the profile of aid marginal returns we rely both on macro and micro evidence.

#### *Lessons from growth regressions: is big push justified by vulnerability?*

The test of the decreasing marginal returns of aid has been an important piece of the debate about aid-growth relationships. In the growth regressions both the aid variable and its squared value were included among the explanatory variables, with respectively positive and negative coefficients expected. This specification involved not only a decreasing marginal impact of aid on growth, but also that, beyond a certain level, an aid increase is detrimental to growth (inverse U curb). The turning point could be considered as a measurement of

absorptive capacity. Conversely if the coefficients are respectively negative and positive or only significant and positive for the squared term, it is an argument in favour of a big push.

The estimation including the aid term and its squared value has been run initially by Hadjimichael et al. (1995), referring to absorptive capacity constraints, then became a usual practice (Burnside and Dollar 2000, Collier and Dollar 2001, 2002, Hansen and Tarp 2000, 2001, Lensink and White 2001). Results strongly differed, with the squared term either significantly negative or not significant. They depend in particular, as clearly documented by Hansen and Tarp, on whether another non linearity is introduced in the model through a multiplicative term of aid, such as aid x policy, as done in the Collier-Dollar model, or aid x vulnerability as done in our previous works, but without the aid squared term (Guillaumont and Chauvet 2001, Chauvet and Guillaumont 2004).

To simultaneously test the existence of two successive turning points corresponding the first to a minimum amount of aid below which it is not effective (an approach to the big push), the second to the level beyond which it is no longer effective (a measure of the absorptive capacity), it might be conceivable to estimate the growth regression with not only the aid variable and its squared value, but also its cubic value, expecting the coefficients to be successively negative, positive and negative, and the returns being the two turning points successively increasing and decreasing. Then the two approaches could be reconciled. However such a specification is not really appropriate: there is no reason to expect negative marginal returns rather than nil returns below the first threshold, and even beyond the second one. This is why a better method seems to look for the thresholds which empirically differentiate the aid growth relationships according to the level of aid. This has been done by Gomanae, Girma and Morrissey (2003). They find that aid becomes effective in contributing to growth beyond 2% of GNP and no evidence of diminishing returns to aid afterwards. But, using annual growth data, they may capture short term rather than long term aid effects. Moreover the threshold is supposed to be the same for all countries. Yet it is most likely that the aid effectiveness thresholds depend on the specific features of recipient countries, what renders the macroeconomic approach difficult to manage.

*New micro evidence from project evaluation, confirming the impact of vulnerability*

The ambiguous results of growth regressions regarding the aid effectiveness thresholds may be due to some extent to the heterogeneity of aid aggregates, including projects, budget support, debt relief, technical assistance, etc. For this reason it is useful to consider a more homogeneous set of aid inflows, for instance a set of projects, and to analyse whether their results seem to depend on the total amount of aid, and specific features of recipient countries as well. If our assumption that aid marginal returns are influenced by the vulnerability of countries, this should be reflected at the micro level, as we see now.

In a working paper by Guillaumont and Laajaj 2006 we consider the results of the evaluation of World Bank projects conducted by the Independent Evaluation Group of the Bank. In this data base the outcome of the projects is measured on a six scale notation ranging from very unsatisfactory to very satisfactory. It makes easy to examine if the rate of success is influenced by the level of aid in the recipient countries and if this relationship depends on its economic vulnerability: we surmise that the rate of success decreases when the total amount of aid increases, but to less extent in the countries highly vulnerable.

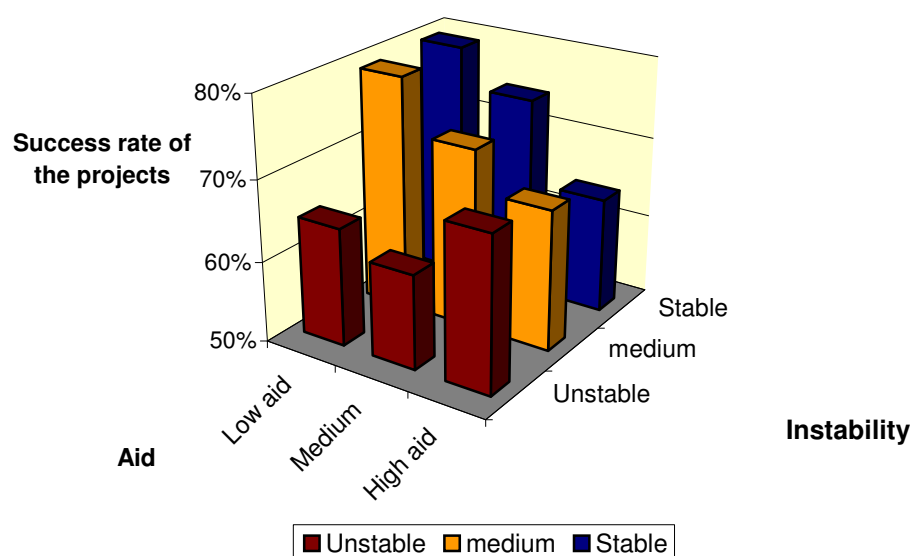
Intuitive support to this view is given by a three dimension graph (Graph 2) representing the average success of projects according to the combined levels of export instability and aid to GDP ratio. The success rate<sup>6</sup> of the projects split up into nine groups: “low aid” corresponds to the third of projects that have been carried out in countries receiving the lowest level of ODA (less than 1 % of GDP), “high aid” to the upper third (more than 8 % of GDP), and so “medium aid ”to the intermediate third, while are identically separated the upper, middle and lower thirds of projects according to the export instability of the countries, weighted by the export to GDP ratio.

It appears that for a low level of aid, the average success rate is 15 points higher in a stable country. However, in stable countries, this rate decreases sharply when the level of aid increases, suggesting a limited absorptive capacity, while in the most unstable countries, the success rate does not decrease clearly: it is even the highest in the most aided countries;

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<sup>6</sup> A project is considered successful if it has been rated at least moderately satisfactory.

moreover in these last countries the average success of projects is the higher the more unstable the countries are.



**Graph 2. Slower decreasing returns of aid to projects when exports are more unstable**

Some econometric estimations evidence these relationships. Following Kaufman and Wang (1995), Isham, Kaufman and Pritchett (1997), Isham and Kaufman(1999) and Levin and Dollar (2005), we have estimated the factors determining the success of World Bank projects, but we did not aggregate project data at the national level, so that regressions are run at the micro level with an observation for each project. Since the outcome of the projects is measured on a six scale notation, the econometric model is an ordered logit. It combines factors related to the characteristics of the project (sector, IDA or IBRD conditions) and to the characteristics of the country (income per capita, level of education, quality of institutions),(as well as year dummies). Its specificity for our concern is to test the influence of these other following variables:

- the total aid to GDP ratio, to identify possible aid decreasing (or increasing) returns (variable introduced also by Dollar and Levin);



- the volatility of exports, which is a source of unstable environment likely to be harmful to carry out projects;
- one variable multiplicative of the two previous ones, consistently with our previous finding at the macro level (with Lisa Chauvet) that aid dampens the negative effects of external shocks.

We expect the success of projects to decline when the total amount of aid increases and when the recipient country faces external shocks (export instability), while the impact of the interactive (multiplicative) variable (aid x instability) be positive<sup>7</sup>. The results of the base regression do not reject our hypotheses. The success of projects is less decreasing in more unstable countries, what emphasises the needs of aid in vulnerable countries.

Another finding is about the role of education in the success of projects. The rate of success is positively influenced by the level of education, but a low level of education dampens the negative impact of aid size on the success of projects: when a multiplicative variable of aid and education is introduced in the model, it appears to have a significant negative impact. This should not be surprising: aid has a knowledge content which makes its marginal impact higher the lower the level of education (similar finding in Gomanae et al. 2003).

Considering that both vulnerability and low human capital are factors of slower decline of aid effectiveness and that these two features are precisely, with a low level of income, the identification criteria of the Least Developed Countries, it suggests that the function of success of projects may differ between these countries and the other developing countries. While vulnerability and lack of human capital are negative factors of the average success of projects, they make this success less declining, or even increasing when the level of aid increases, what do not preclude such a decline beyond a certain level of aid: it means

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<sup>7</sup> In this model the success of project, which is directly estimated, is found decreasing when the coefficient of the aid value received by the implementing country is negative. Then if the outcome of projects is declining when the total amount of aid increases and if it is lower when the recipient country faces external shocks (export instability), the positive expected impact of the interactive (multiplicative) variable (aid x instability) means, as in the growth model, that aid dampens the effect of instability. By comparison in the aid-growth model the marginal return of aid is given by the first derivative of growth and is found positive and decreasing with the coefficients of aid and of its squared value are respectively positive and negative: in the aid-growth model aid lowers the negative impact of instability even if there are constant returns, in the success-of-project model the decrease of aid project outcome is slowed down by instability. When instability is high, aid outcome may cease to decrease or even be increasing.

that they would push further the limits of absorptive capacity. We then estimated a success-of-project model where the explanatory variables are the aid to GDP ratio, its squared value, and a dummy variable for LDCs, introduced both additively and multiplicatively of the aid ratio and its squared value<sup>8</sup>. The results are represented in the following graph (Graph 3). In the non LDCs developing countries the outcome of projects is generally higher than in LDCs, but declines when aid increases (the turning point around a 17% aid ratio is not empirically relevant since in only less than 1% of cases countries reach this level of aid). In LDCs the average rate of success increases when aid to GDP ratio increases, at least below a threshold estimated around 25% in the estimation corresponding to the graph 3, and do not decrease quickly beyond it (25% of cases beyond this point). Clearly, even if the LDCs obtain a lower average rate of success, they evidence increasing returns to aid and a higher absorptive capacity.

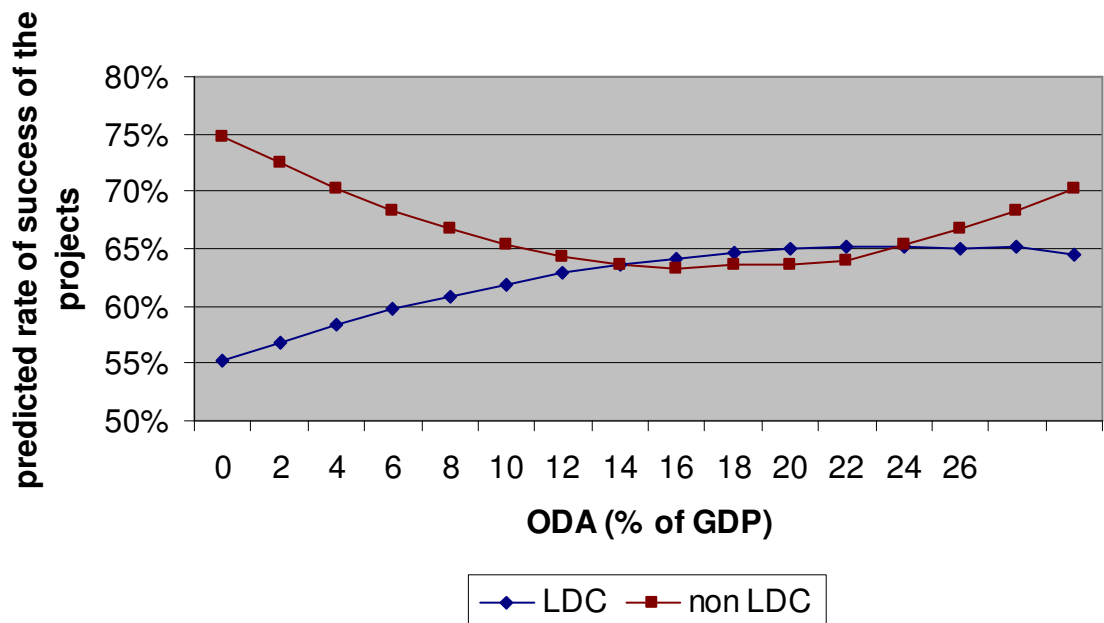
A last but not less intriguing result of the previous estimations is that institutions do not appear as a significant factor of the success of projects.

#### **4 - Institutions weakening: towards performance based conditionality**

The relationships between aid and the institutions of recipient countries have been examined in the literature from three different angles. First in the aid effectiveness literature institutions (and policy) have been presented as a crucial factor of effectiveness (in the “ABCD paradigm” of Assessing Aid, Burnside, Collier, Dollar), a factor, as well known, strongly debated. Second the impact of institutions on inter country aid allocation has been analysed and debated, both as a positive issue and as a normative issue, in particular with the aim to assess the selectivity of donors (Amprou, Guillaumont and Guillaumont Jeanneney, 2006). Third the effect of aid on the quality of policies and institutions has been for a long time a matter of concern and now meets a topical interest as it could significantly limit absorptive capacity. Relying on some past and recent views on this third matter, we try to see what can be the appropriate answer to prevent aid from weakening the institutions of recipient countries.

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<sup>8</sup> The variables corresponding to the identification of LDCs, income per capita, vulnerability, lack of human capital are excluded.



**Graph 3. Least Developed Countries: higher absorptive capacity, despite initial handicap**

*The institutional dimension of absorptive capacity*

Is aid dependency lessening domestic institutions, which are now considered as an important factor of economic growth? Several potential negative effects of large aid inflows on institutions have been identified, mainly the effect passing through a detrimental impact of aid on private saving, the impact on state revenue and the consequences on the accountability of public management ( or the link between the state and the civil society).

The crowding out effect of aid on savings has been the first analytical attack against foreign aid and was largely debated, in particular on empirical grounds (Griffin 1970, Papanek 1973). A common conclusion at the aggregate level was that even if aid has a short term negative impact on savings, it however increases investment and doing so contributes through a higher income to a long term increase of the saving ratio (Guillaumont 1985). The crowding out effect relied on two basic assumptions, linked to policy and institutions. Aid was first supposed to grasp the better investment opportunities and then discourage private

savings and investment: it would thus exert an institutional effect on the financial system, the deepening of which be reduced. It was not sure that this effect resulted more from aid than from other sources of external finance and it has not been deeply investigated.

The second crowding out effect, related to fiscal revenue, has been more extensively examined, both through cross section and country case studies. However results are mitigated, as it appears in the survey by Moss, Pettersson and van de Walle (2006). Even if the literature finds more often than not a negative relationship, it raises several problems. A first one is due to the heterogeneity of aid flows and of tax receipts, with possible specific responses of each kind of tax to each kind of aid: Gupta et al.(2004) suggest that grants, but not loans have a negative effect on total tax revenue, while Mavrotas, 2005, (who also consider the effects on the different kinds of public expenditure) argues that “in Uganda the government did not reduce its tax effort following additional disbursements of the different types of foreign aid”. A second problem is related to aid endogeneity: aid and fiscal receipts are linked by reciprocal relations and may be influenced by common factors, while the instrumentation of the aid variable is often unsatisfactory. Finally and most importantly studies focused on the short term impact of aid inflows do not allow one to capture the long term and institutional effects.

As for long run effects we face two opposite views. On one side an aid dependency concern leads to underline the risk to see the state depending too much on foreign aid and thus to be accountable to foreign donors rather than to the national population or civil society. In that perspective crowding out of fiscal revenue is considered as a factor of weak accountability, since governments do not need to maintain their legitimacy to collect revenue (Moss et al. 2006). It is not sure however that collecting taxes is always a factor of democracy and institution building, as the heavy taxation of African agriculture in the seventies and afterwards has shown. On the other side aid increase can be considered as a transitory impulse generating pump priming effects which will make aid itself less and less needed. A good example is also given by tax policy: if aid allows a country to reduce high and distortionary taxation, it will help to break an obstacle to growth and possibly lead in the future to a larger amount of public revenue (Gunning 2004).

The more detrimental effects of aid on institutions are other ones and mainly due to the ways by which aid is delivered. There is indeed a socio political dimension of absorptive capacity, but to some extent it comes from aid modalities. This may seem paradoxical since a

larger and larger part of aid is devoted to budget support which is conditioned by policy reform. Traditional conditionality has been strongly criticised. In particular it has been argued that it was inefficient due to the common interest of the partners to do as if it was efficient (Collier et al.1997). This criticism has found an utmost expression in the hypothesis, made by Burnside and Dollar (2000), that aid has no effect on policy. This hypothesis, has been challenged not only in cross section studies (see for instance Chauvet and Guillaumont 2004<sup>9</sup>), but also and more significantly by the African case studies achieved at the request of the World Bank (Devarajan, Dollar and Holmgren 2001 and the comments by Berg 2003 and Tarp 2003): it is difficult not to recognise that the intense policy dialogue between donors and recipient governments has not led to some significant policy decisions or institution reforms.

However the crucial issue of ownership, already raised in the initial criticism of conditionality, seems to remain unsolved: the pressure of donors to “obtain” policy measures and reforms and the commitment of recipient countries to account for to external agents lead the governments and civil servants in these countries not to feel fully responsible for their action. Moreover they are less inclined to justify their action otherwise than by their external commitments. “The hypothesis here is that large aid flows fundamentally alter the relationship between government, elites and local citizens” (Moss, Pettersson and van de Walle 2006). This lack of ownership and accountability to citizens is enhanced by the weight of donors advice, presence, missions and own agenda, as stressed by Elliot Berg in his last and posthumous paper (2003).

*Why a performance-based conditionality is an answer to the drawback of aid dependency*

Face to the socio political limits to absorptive capacity, a usual answer of donors is to consider that the weak administrative capacity is the main source of the difficulties and has to be enhanced. The reinforcement of capacities has thus been a goal of aid, well reflected in the share of technical assistance. A future increase of aid should then justify a further move in this direction. It is a reasonable principle. However it has sometimes been implemented in a poorly efficient manner. A common practice is to set up autonomous agencies in order to

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<sup>9</sup> Tests do not reject our hypothesis that policy is all the more improved by aid that its previous quality is weaker, what leads to an aid effectiveness depending negatively from the previous policy (and positively from the current one).

attract the best civil servants, with higher wages, possibly after appropriate training, and avoid administrative inertia. It is a short term search for efficiency, but often a factor of discouragement within traditional administration. Policy aiming at diminishing the number of civil servants and pay them more, possibly after appropriate training, is longer term focused, although it may be politically difficult.

The diagnostic about the drawbacks of aid dependency calls for deeper reform in aid practice. In previous papers we have argued in favour of an outcome-based or performance-based conditionality for budget support, instead of a conditionality based on the adoption of policy changes (Collier et al. 1997, Adam et al. 2004). Performance would be measured, as much as possible, in terms of ultimate objectives, such as reduced child mortality or knowledge acquisition by children. To quote us, “A performance based approach allows for better ownership of reforms, since the choice of instruments would reside with the country; it avoids arbitrary judgement on multiple heterogeneous economic policy measures; and it facilitates gradual and progressive support according to the degree of progress of performance relative to outturns; and by eliminating the scope of discordant conditionality, it supports better coordination between donors” (Adam et al. 2004).

The principle of this proposal has not met strong criticism. But the likelihood of its implementation by a significant number of donors has appeared rather limited. Even the European Union which has taken the pioneering initiative of a reform in that direction has stayed half way, as the conditions retained refer to intermediate indicators close to policy instruments (Ibid.). The main hindrances to the full implementation of a performance-based conditionality are twofold. One is a lack of trust in the capacity and will of the recipient countries, a lack which creates a vicious circle since without ownership capacities will not really develop. The second and probably more important one is the weight of habits within aid agencies. Full performance based conditionality would involve a dramatic change of their job, which would be devoted to monitor and assess the progress in the results obtained by countries for a few number of final indicators of development, taking into account the impact of exogeneous factors, independent of the policy.

As for countries where there is no minimal state or in the lasting failing states, it may not be possible to undertake such a reform. At least transitorily increased aid inflows should be delivered more directly through technical assistance and projects bypassing the failing

states (Chauvet and Collier 2005), in particular implemented through civil societies organisations (EGDI 2006, Cohen, Guillaumont Jeanneney et Jacquet 2006).

## **5 - Conclusion: how to reconcile the two approaches**

In this paper we have neither rejected the relevance of a big push nor denied the existence of serious limits to absorptive capacity, while considering that both require further analysis. The limits to absorptive capacity do not lead to give up the big push, on the contrary a big push seems needed to push away these limits. However it is feasible only if aid policies are designed consistently. The general conclusion we draw to reconcile the two approaches is that absorptive capacity strongly depends on aid itself or on its very modalities. Big push and absorptive capacity approaches cannot be reconciled without an aid reform coming with aid increase. In that perspective following main lessons can be drawn from the previous analysis.

First, needed is to balance the utilisation of aid between directly productive and social activities, in order to avoid transitory loss of competitiveness.

Second, schemes helping to use aid as insurance against exogenous shocks are to be enhanced because they lower the risk of Dutch disease and contribute to a faster and more equitable long term growth.

Third, due to the higher marginal impact of aid in vulnerable countries and in particular the Least Developed Countries, where the need of a big push is the clearest, priority should be given to these countries in aid allocation.

Finally, as much as possible, a performance-based conditionality should be substituted to the traditional policy-based one in order to cope with several absorptive capacity limitations, most importantly the socio-political one. An aid supported big push will not be effective without a new ownership of their policies by the recipient countries.

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## BIONOTES

**Patrick Guillaumont** is Professor at the "Université d'Auvergne", working at CERDI (Centre d'Etudes et de Recherches sur le Développement International). Chairman of the "Fondation pour les Etudes et Recherches sur le Développement International" (FERDI), he is also Director of the *Revue d'Economie du Développement*. Patrick Guillaumont is a Member of the United Nations CDP (Committee for Development Policy), where he has chaired several UN expert groups on the identification criteria of LDCs (Least Developed Countries). He is also a member of the European Development Network (EUDN), of the Programme Committee of AERC (African Economic Research Consortium), and of the Expert Group on Development Issues (EGDI), Sweden Ministry of Foreign Affairs. He was given, in 1992, the "Prix El Fasi de la recherche francophone". Patrick Guillaumont has published many books and papers, mostly about development economics, in a wide range of journals including *China Economic Review*, *Journal of African Economies*, *Journal of Development Economics*, *Oxford Economic Papers*, *World Bank Economic Review*, *World Development*, *World Economy*,...

**Sylviane Guillaumont Jeanneney** is Professor of Economics at the University of Auvergne and Researcher at the *Centre d'Etudes et de recherches sur le Développement international* in Clermont-Ferrand, France. She was President of the French Economic Association and member of the Economic Analysis Council near the French Prime Minister. She has been since 1978 Member of the Administration board of the *Agence française de Développement* which manages the French public bilateral aid flows and she has been consultant for the World Bank and for the UNDP. Her main research interests lie in the area of macroeconomics (in particular monetary and exchange policy, international relations and cooperation). Her articles are published in English, French and Chinese in a wide range of journals including: *Journal of development economics*, *World Development*, *World Economy*, *Review of International Economy*, *Journal of African Economies*, *China Economic Review*.